

CLAIMS

1. A base station devised for indoor use in a WCDMA network, comprising a support unit including a power supply unit, said support unit being adapted to be attached to a support structure, and a complete base station unit mechanically supported by said support unit, said complete base station unit being designed as a separate docking unit locked in said support unit by cooperating snap locking means arranged in said support unit and base station unit, allowing an easy installation/removal of said complete base station unit in/from said support unit .
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2. The base station according to claim 1, wherein said power supply unit housed in said support unit comprises an AC/DC converter feeding said complete base station unit with a DC-voltage.
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3. The base station according to claim 1 further wherein said base station unit has a sandwich structure comprising a rigid metal back plate, a rigid metal front plate, and a main circuit board attached intermediate said back plate and front plate.
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4. The base station according to claim 3, wherein said rigid metal back plate comprises cooling flanges .
5. The base station according to claim 4 wherein said back plate's cooling flanges are arranged on the side facing away from said circuit board whereby said main circuit board is cooled by means of self-convection through said back plate .
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6. The base station according to claim 3 wherein all circuits of a control processing block, a base band processing block and an RF block are arranged on said main circuit board .
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7. The base station according to claim 6 wherein said main circuit board comprises border portions dividing the main circuit board in sections with separate circuits for said blocks, and where said front plate comprises inner walls with end portions engaging said border portions for shielding said separate circuits from each other.
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8. The base station as recited in claim 3 wherein it comprises a transmission interface block realised in form of a separate circuit board, which is attachable to the main circuit board by means of a contact interface, thereby allowing an easy substitution of said circuit board.
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9. The base station according to claim 1 wherein said support unit comprises support members and said base station unit comprises cooperating hanger members which are devised to connect to said support members in a pivoting engagement, and wherein said snap locking means are included in said support unit and in said base station unit, which are devised to engage with each other by pivoting said base station unit.
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10. The base station according to claim 9 wherein said snap locking means are formed by an inwardly projecting knob on a side wall of the support unit, and a cooperating recess in the base station unit, wherein engagement of the knob and the recess locks said base station unit from moving vertically upwards and horizontally outwards from the support unit.
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11. The base station according to claim 9 wherein said snap locking means are realised by means of spring-loaded engaging means arranged on a side wall of said support unit and a cooperating recess in a side wall of said base station unit.
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12. The base station according to Claim 1 wherein said base station comprises
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at least one interface for connecting an external alarm equipment with a control processing circuit of said base station , thereby allowing the establishment of a communication channel between said external alarm equipment and a central alarm station.

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13. The base station according to Claim 1 wherein said base station comprises a handle at a side portion, allowing the base station to be carried.

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14. The base station according to claim 13 wherein said handle is arranged on the lower end of said base station unit , when the base station unit is installed in said support unit , and that said handle further comprises a cable race groove.

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15. The base station according to claim 14 wherein at least one cable contact is positioned at the lower end of said base station, when the base station unit is installed in said support unit , under said handle and tilted about 45 degrees.

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16. The base station according to Claim 1 wherein it comprises an internal antenna covered by a front cover of an electromagnetically transparent material.

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17. Base station devised for indoor use in a WCDMA network, comprising a base station unit having an interface for connection to a power supply , a radio network controller, RNC, and to an antenna , said base station unit having a sandwich structure comprising a rigid metal back plate , a rigid metal front plate , and a main circuit board attached intermediate said back plate and front plate , wherein all circuits of a control processing block , a base band processing block and an RF block are arranged on said main circuit board .

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18. The base station as recited in claim 17, wherein said rigid metal back plate

comprises cooling flanges .

19. The base station as recited in claim 18, wherein said cooling flanges are arranged on a side facing away from said circuit board, and wherein said main circuit board is cooled by means of self-convection of said back plate.
20. The base station as recited in any of claims 17 wherein said main circuit board comprises border portions dividing the main circuit board in sections with separate circuits for said blocks, and where said front plate comprises inner walls with end portions engaging said border portions for shielding said separate circuits from each other.
21. The base station according to claim 17, wherein said front plate comprises a mechanical interface for attaching an internal antenna, and wherein said antenna is covered by a front cover of an electromagnetically transparent material.
22. The base station as recited in claim 19 further wherein the control processing block and Radio Frequency block of said main circuit board are arranged in separate shielded compartments formed between said front plate and back plate, whereby said control processing block and Radio Frequency block are electromagnetically shielded from other electric circuits of the base station .
23. The base station as recited in claim 18 further wherein a transmission interface block is realised on a separate circuit board, which is attachable to the main circuit board by means of a contact interface, thereby allowing the easy substitution of said circuit board .
24. The base station according to claim 23 further wherein said circuit board, a base band processing block and a DC/DC block of said circuit board , are

arranged in separate shielded compartments formed between said front plate and back plate , and whereby said circuit board , base band processing block and DC/DC block are electromagnetically shielded from other electric circuits of the base station ..

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25. A cellular radio network, including one or more macro base stations, wherein said network further comprises a base station devised for indoor use in a WCDMA network, comprising a support unit including a power supply unit, said support unit being adapted to be attached to a support structure, and a complete base station unit mechanically supported by said support unit, said complete base station unit being designed as a separate docking unit locked in said support unit by cooperating snap locking means arranged in said support unit and base station unit, allowing an easy installation/removal of said complete base station unit in/from said support unit.

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26. Method for assisting the installation of a base station for indoor use in a WCDMA network, which base station comprises a support unit including a power supply unit , and a complete base station unit mechanically supported by said support unit , comprising the steps of:

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- mechanically attaching said support unit to a support structure;
- mechanically docking said base station unit into the support unit by engaging cooperating snap locking means arranged in said support unit and said base station unit ;
- connecting the base station unit to a radio network controller, RNC, of said network, to an antenna , and to said power supply unit ; and
- downloading application software and office data from a management tool to said base station unit, allowing the establishment of a communication channel between said base station unit and said RNC .

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27. The method according to claim 26 wherein said step of mechanically attaching said base station unit to the support unit comprises the following

steps:

- engaging hanger members of said base station unit with cooperating support members of said support unit, and,
- pivoting said base station unit into engagement of cooperating snap locking means arranged in said support unit and said base station unit .

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28. The method according to claim 26 further comprising the steps of:

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- connecting an external alarm equipment to said base station unit ,
- downloading specific software for said external alarm equipment to the control block unit of said base station unit, allowing the establishment of a communication channel between said alarm equipment and a central alarm station.

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29. The method as recited in claim 26, comprising the step of :

- connecting said management tool directly to said base station unit by means of a Local Management Tool, for direct downloading of said application software and office data to the base station unit.

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30. The method as recited in claim 26, comprising the step of :

- connecting said management tool to a central radio network controller, RNC, of said network, for downloading of said application software and office data to the base station through said network.

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31. Method for assembly of a base station unit as recited in claim 17, comprising the steps of;

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- placing the back plate on an assembly support;
- placing the circuit board on the back plate ;
- attaching the circuit board to the back plate ;
- placing the front plate on the circuit board ; and
- attaching the front plate to the back plate.